S
353.5
C48OSP
1977

MONTANA STATE LIBRARY
3 0864 0014 9324 9

An Overview Study of Potential Linkages Between Natural Resource Management and Human Resource (Low Income) Program Areas

PREPARED BY:

Dan Newman (Consultant)
John C. Orth (Director)

Montana Department of Natural Resources and Conservation
32 South Ewing St.
Helena, Montana 59601

STATE DOCUMENTS COLLECTIC

MAY 20 2004

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

FOR

DIVISION OF HUMAN RESOURCES
MONTANA DEPARTMENT OF COMMUNITY AFFAIRS
1424 NINTH AVENUE
HELENA, MONTANA

UNDER A GRANT FROM THE
COMMUNITY SERVICES ADMINISTRATION
WASHINGTON, D.C.

AUGUST 1977

Digitized by the Internet Archive
in 2010 with funding from
Montana State Library

http://www.archive.org/details/overviewstudyofp1977mont

1. INTRODUCTION
2. BACKGROUND
3. NATURAL RESOURCE SITUATION OVERVIEW
4. HUMAN RESOURCE SITUATION OVERVIEW
5. IDENTIFIED LINKAGES
6. SPECIAL CASES, DEMONSTRATIONS
7. CONCLUSIONS AND RECOMMENDATIONS

APPENDIX A -- CONTRACT

APPENDIX B -- EXCERPTS OF SELECTED DEPARTMENT PROGRAMS FROM GOVERNOR'S ANNUAL REPORT - FY 1976

APPENDIX C -- LIST OF JOB DESCRIPTIONS FOR PROBABLE FUTURE POSITIONS IN ENERGY/CONSERVATION AREAS

1. INTRODUCTION

The purpose of this study is to investigate potential linkages between the natural resource management area and the human resource community within the state of Montana. The intent is to identify state natural resource areas which could be better utilized or benefitted by new or increased application of low income human resources and which, in turn, could provide new and meaningful opportunity for low income people from the standpoints of jobs, life style enrichment, community based businesses, supplemental income, training and new experience, and improved economic independence potential. A mutuality of benefits is the essential criterion here, rather than emphasis on socially or economically unacceptable aspects such as "public work for welfare," natural resource subsidization of welfare, or raw subsidization of natural resource management with federal welfare and employment programs. The guiding precept is that low income people can and will become self-supporting if provided with reasonable economic opportunities. The availability of such opportunities in the natural resource management area is to be found.

Specific tasks to be accomplished in this study include:

1. investigation of natural resource areas which are susceptible to providing jobs and community based business opportunities for low income people.

2. study of the utilization of established low income program expertise and organization in the substantial demonstration of conventional and innovative application of renewable, alternative energy forms and energy conversion systems.

3. overview study of potential for improved dwelling energy conservation practices and materials systems which are leased on more efficient or innovative use of forest resource primary and secondary products. This effort will be limited to conclusions drawn from consultation with private and public forest products utilization experts.

4. review physical assets of Water Resources Division (state water projects) and identify potential natural/human resource demonstration projects based on such aspects which could provide economic and program benefit to the low income community.

This study is funded by a grant of $5,400 from the Human Resources Division, Department of Community Affairs. Funding was provided from federal Community Service Administrative grants. Mr. John Allen, Administrator, Division of Human Resources, is the cognizant grant official. The Department of Natural Resources and Conservation (DNR&C) contracted with Mr. Dan Newman, Helena, Montana, to accomplish the bulk of the study. DNR&C also committed its own manpower resources to this study to the extent of approximately 200 manhours in administrative support, consultation and technical skills. A considerable portion of this time was provided at no-cost to the state by interested individual employees.

2. BACKGROUND

For the purposes of this study, the following listed resource areas are considered to be "natural resource management areas." State agency considered to have primary responsibility for each area is as listed, while secondary or other involvement of state agencies in that AREA is listed under "OTHER".

	RESPONSIBLE STATE AGENCY	
AREA	PRIMARY	OTHER
FORESTS	DNR&C	LANDS, UNIV.
STATE LAND	LANDS	
WATER RESOURCES	DNR&C	H&ES, UNIV.
RECREATION	F&G	DNR&C, UNIV.
FISH, WILDLIFE	F&G	
MINERALS	LANDS	BUREAU OF MINES & GEOLOGY, UNIV.
ENERGY	ENERGY OFFICE	DNR&C,LANDS, PSC, UNIV.
AIR	H&ES	
OIL AND GAS	DNR&C	UNIV.

DNR&C	--	DEPT. OF NATURAL RESOURCES AND CONSERVATION
LANDS	--	DEPT. OF STATE LANDS
H&ES	--	DEPT. OF HEALTH AND ENVIRONMENTAL SCIENCES
F&G	--	DEPT. OF FISH AND GAME
ENERGY OFFICE	--	ENERGY OFFICE OF LIEUTENANT GOVERNOR OFFICE
PSC	--	PUBLIC SERVICE COMMISSION
UNIV.	--	ELEMENTS OF UNIVERSITY SYSTEM (FROM EDUCATION AND R&D ASPECTS)

Again, for purposes of this study, Human Resources are defined to be low income people (average family income less than $5,850 per year), and particularly those receiving or eligible to receive programmatic support from the federal Community Services Administration through the Division of Human Resources, Montana Department of Community Affairs, and associated Human Resource Development Councils within Montana. This is not to say that the opportunities identified in this study are not also valid for other constituencies.

From its inception as a "settled" territory Montana has been a natural resource extraction or exploitation state. Primary and traditional industries within Montana are Agriculture (exploitation of land, water), Mining (extraction of non-renewable mineral estate), and Forest Products (extraction of renewable forest resource). The words "extraction" and "exploitation" do not necessarily imply a "bad" connotation. To the contrary, agriculture represents, in general, a highly beneficial use of resources, and involves a continuous "sweat equity" which results in careful conservation and continuous productivity of the resources used. Timber harvest from the forest resource again represents a beneficial conversion of a natural resource to man's use, but it has not always been conducted in even a minimally efficient manner (from the standpoint of resource utilization), and it is only since the establishment of modern forestry practices that a reasonable degree of resource conservation and care has been realized. Mining produces the metals, minerals and fossil fuels needed for society, but its record of environmental compatibility has been historicaly poor until enactment of strict reclamation and environmental protection laws in recent years. It is significant that these three resource based industries have traditionally produced far more than needed for Montana's own requirements, and it this resource export factor which has produced the bulk of Montana's income. Montana has received less than its share of the generally desirable and job producing industry which processes the primary resources into finished products. To some, this overall situation makes Montana appear somewhat as a resource producing colony for more populous regions of the country. As such, Montana's economy is heavily and disproportionally affected by external factors and forces.

Montana has other resource based industries, although of lesser importance than the agriculture - forest products - mining trio. The earliest white visitors to Montana were trappers, gaining a subsistence on the territory's abundant wildlife. The late 1800's in Montana were marked by the wanton destruction of the bison or buffalo wildlife resource purely for the extraction of the pelts or hides. Today, trapping of fur bearing mammals still constitutes a small but significant source of revenue for some, particularly small ranchers and farmers. Hunting of deer, elk, antelope and moose continues to be important in Montana from both recreation and food budget standpoints. Montana's water resource has been extensively developed for irrigation and hydroelectric power production. Following the export tradition, much of the hydroelectric power generated in Montana is exported to other states to support product manufacturing operations.

Recreation constitutes an important natural resource based industry in Montana -- one which has been growing in economic importance in recent years. Here, however, the basis of the recreation industry is minimal resource development, and maximum preservation of the scenic values of the environment.

The resource based industries have been the basis of the primary employment in the state. However, the advent of improved machinery and methods in each of the three primary industries has steadily increased the productivity per worker while simultaneously decreasing the number of workers needed. An economically driven trend from many relatively small agricultural units to a relatively few large mechanized farms or ranches has further reduced primary and secondary employment in that sector. Declining inventory of readily accessible resource (as in mining and forest products), higher labor costs, increased mechanization, inflation, depressions and recessions, external competition, and external manipulation of product prices have all contributed to the increase in unemployment in Montana. The unemployed, together with a senior citizen constituency on small fixed incomes and new youthful entrants to the job market constitute a "low income" segment of society which has been growing in size in recent years and constitutes a societal problem of significant proportion.

In general, Montanans are fiercely independent and proud, and have a strong aversion to "public welfare," either personally received or given to others. The work ethic is still strong in Montana, and the concept of self-help is alive and well. Unfortunately, the same cannot be said for the "opportunity pool" which must exist if self-help is to be effective. Too many Montanans, particularly the young and professionally or technically trained, full of ambition and finding little economic opportunity within Montana, choose to move to states where such opportunity exists. Thus, there are literally hundreds of former Montanans in such places as Seattle, Portland, San Francisco, Los Angeles, Chicago, St. Louis, Dallas, Minneapolis, Salt Lake City, New York, Boston and Washington, D. C. It is the export of this trained, youthful human resource which perhaps constitutes the most lamentable loss of Montana's resources.

It is both true and interesting to note that many of the forebearers of present Montanans - the pioneer Montanans - were themselves "low income people" when they first arrived in Montana, by the standards of their day. By hard work and endurance they were able to build economic security for themselves and their families based on the use of Montana's abundant natural resources. It would be fitting indeed if the needed self-help opportunity pool previously referred to could be provided to todays low income people in Montana from the natural resource estate which we possess. Admittedly, many of the traditional routes to economic success from natural resources are no longer available or practical, but it would seem on the surface that the extent of the resource is so great and so varied that innovative, creative and positive action by state government could go far to re-establish a viable Montana opportunity pool.

Some years ago a world renowned architect visited the then largely unrenewed city of Milwaukee, Wisconsin. He observed, much to the chagrin of his city father hosts, that judging from the impressive old buildings a vigorous and creative people must have once inhabited the city. Montana's own history is both interesting and glamorous, yet relatively brief. In Montana of 1977 there is a pre-occupation with Montana history which amounts almost to an obsession. Could it be that many of todays Montanans are so concerned with the past that they cannot effectively deal with improving the economic future? Is that vigorous and creative people which built this state on utilization of natural resources no longer extant? Or is it possible that Montanans can find a new will and innovative ways to conserve and exploit their natural resources to create the economic opportunity required if low income people are to help themselves?

3. OVERVIEW OF STATE GOVERNMENT NATURAL RESOURCE SITUATION

The relationship of state government to natural resources in Montana historically has had two principal elements. The first of these is the actual management of timber, land, water, recreation and mineral resources located on state owned lands, as given to the state as School Trust Lands under the original Enabling Act, and as otherwise secured such as in state water projects and recreation areas. The second is a regulatory function related to private and corporate use of natural resources and in implementation of specific legislation. This second function has become increasingly important during the past ten years as more and more concern for Montana's environment and for the declining resource base has been expressed in regulatory legislation by the state legislature.

Currently state owned lands are listed under several categories below.

1. SCHOOL TRUST	
a) FOREST	491,905 acres
b) OTHER	4,743,594 acres
2. FISH & GAME DEPT.	192,514 acres
3. UNIVERSITY SYSTEM (CAMPUS AREAS)	48,609 acres
4. UNIVERSITY SYSTEM (LAND GRANT AREAS)*	236,051 acres
5. WATER PROJECTS	24,908 acres
6. INSTITUTIONS	39,159 acres
7. CAPITOL COMPLEX OTHER OFFICES	15 acres
8. HIGHWAY DEPT.	162,344 acres
9. MILITARY AFFAIRS DEPT.	80 acres

*PORTIONS OF UNIVERSITY LAND GRANT AREAS ARE ALSO INCLUDED IN SCHOOL TRUST TOTALS

The state of Montana, then, is the proprietor of almost 6 million acres of land, or slightly over 6% of the total land in the state. The largest block of this land, the School Trust lands, is managed by the Department of State Lands under the supervision of the Land Board. The forested portions of the School Trust lands are managed by the Division of Forestry of the Department of Natural Resources, in conjunction with the Department of State Lands, and again under the direction of the Land Board. There is a legal mandate attached to the School Trust lands which requires continuous maximization of dollar return to the Trust from management of these lands. The manager of these lands has little discretion, then, in their operation and use in that he must select those resource utilization options which yield the greatest return to the Trust on a continuing basis.Depending on land types and location, these uses are generally timber harvest, mineral production, grazing, cabin site rentals, and to a lesser degree, recreation. On forested Trust lands the recreational uses are generally intended to channel people to selected areas where they automatically afford a degree of protection to the resources, such as reporting of fires.

The Division of Forestry has the responsibility of providing wild-fire protection as well as timber harvest and management duties for the forested Trust lands. In addition, the Division provides fire protection to state owned lands and to certain privately owned forested lands either directly or through cooperative agreements with federal or county agencies. The total area so protected is approximately 21,000,000 acres. Treatment of logging slash for fire hazard reduction on state and privately owned lands is another Division responsibility, either directly or in a supervisory capacity. In timber management, the Division of Forestry prepares and conducts timber sales for an average harvest of 15 to 20 million board feet per year. Timber stand improvement involves such activities as stand thinning, accomplished largely with CETA crews. The work of the Division of Forestry is extremely manpower intensive, since it is so intimately involved with resource utilization and protection. Historically, the Division has effectively utilized existing Human Resource programs such as CETA, NYCC and GreenThumb to accomplish its many duties. This interaction has been extremely beneficial to state resource improvement and to the participants from economic and experience standpoints.

The remainder of the School Trust lands, (those not classified as forested) are managed by the Department of State Lands. Principal activities include the leasing of these lands for grazing and other agricultural purposes, as well as upgrading of the land resource through such activities as irrigation projects. In general, the Land Departments activities related to Trust lands are managerial and planning in nature, and not nearly so manpower intensive as in the forested land case.

The Fish and Game Department operates some 192,000 acres of state owned lands, primarily for recreation use by Montana citizens (parks, campgrounds, fishing access areas), but also for such activities as fish hatcheries and game rearing farms. The management of these lands is quite labor intensive, particularly in association with maintenance and construction of recreation areas. In some cases this work is accomplished by Department employees, which in others work is performed under contract to the Department by individuals and private firms.

The University system lands include areas utilized for college campus and facilities operation of Agricultural Experiment Stations (15,125 acres) an experimental forest (20,850 acres), field stations, student housing, recreation, research facilities, and income to endowment and research foundations. Each campus generally manages the resources assigned to it. In general, these lands are well managed, although it would appear that there is considerable opportunity for more intensive utilization, if sufficient manpower resources were available. University System Land Grant areas are generally managed by the Department of State Lands, with revenue being applied to the University.

Highway Department lands (162,344 acres) are primarily for road rights-of-ways, with a small percentage used for facilities. It is generally thought that lands so dedicated (right-of-way) cannot be utilized in a multi-purpose manner. However, in recent years there have been numerous proposals from a variety of sources to selectively farm highway median and side strips for specialized crops. There are obvious hazards and problems associated with this, but it is true that a very large area of under-utilized land could be converted to productive use in this manner. An additional benefit which might be achieved is the reduction of highway weed-cutting maintenance costs, in that the agricultural lease holder would automatically provide that service.

The Water Resources Division of the Department of Natural Resources and Conservation holds title to almost 25,000 acres of land, of which an estimated 90% is used for reservoir pool and irrigation canal and road right-of-way purposes. On a number of 35 individual properties there are small recreation areas (picnic grounds, campgrounds), which are managed either by the Fish and Game Department or the local Water Users Association. At least 6 of the projects have buildings (small residences, barns, sheds, utility buildings) in various combinations located on the properties. In general, these buildings are used by the Water Users Associations for operational purposes.

In at least one case-the Nevada Creek project - a complete set of ranch buildings is on the property, and no utilization or maintenance has been made on this state asset. As a part of this Grant program, a human resource utilization and demonstration project review of this property was made, and initial rehabilitation of the physical assets was initiated using a 10 person CETA crew. As a part of the experiment, use of the CETA crew for stand-by wildfire fighting and for brush cutting on the Nevada Creek dam is planned. The possibility of using the CETA crew to seal leaking state owned canals on the project is also being considered.

Since most of the state owned water projects were built in the 1930's and 1940's, the advancing age of the projects has resulted in a drastic increase in needed maintenance work. This has occurred at a time when capital resources available to the state to accomplish such maintenance work are simply not available in sufficient amount to permit really effective rehabilitation of the facilities. With the depressed agricultural prices adversely affecting the agricultural economy, the farm and ranch water users on these projects cannot be reasonably expected to provide sufficient additional income to effect the full measure of needed repairs. As a result, the Department of Natural Resources faces the very real problem of managing 35 projects of great importance to the Montana economy in the face of ever increasing funding limitations and rapidly increasing demand for more funds to offset the accelerating deterioration. The trend in water project maintenance has been toward greater mechanization and reduced manpower, yet the cost of the mechanization seems to be rapidly outstripping the cost advantage over more labor intensive methods formerly used.

Average construction wage + fringe ~~[illegible]~~ increases April ~~[illegible]~~ '76 - April ~~[illegible]~~ '77 was 7.0%. Increase since '67 = 145% Common, 125% Skilled

Average water projects cost increase April '76 - April '77 was 6.5%. Increase since '67 = 114%

Other agencies of state government which manage land assets (office complexes, military installations) are considered to operate with much too specialized and small a land base to warrant consideration for extensive human resource interaction.

The regulatory aspects of state natural resource management activities have grown in importance and in manpower cost to agencies in response to the increased environmental and resource conservation legislation which has been passed in the past 10 years. For example, the various laws relating to open cut and strip mine siting and to mine reclamation have markedly increased the number of state employees needed to perform the mandated siting studies. In the energy field, a similar situation exists in the Department of Natural Resources with the Major Facility Siting Act. In the water rights area, the administrative burden of adjudication of existing water rights and the granting of new water rights is responsible for the addition of at least 30 new state employees, yet to effectively accomplish this job at least double that amount is required.

The Air and Water Quality aspects of state legislation place an increased burden on the Department of Health and Environmental Sciences to provide a sufficient staff to accomplish a broad program of studies, sampling, analysis and impact assessment in a timely matter.

The Conservation Districts in the state of Montana are political subdivisions of the state and have been a major effective force in improving the agricultural situation in the state since 1937. There are 59 individual Conservation Districts covering the entire state. Besides the historic mission of planning, implementing and supervising soil and water conservation plans and practices, and other agricultural improvement activities, the locally controlled Conservation Districts have more recently been assigned other state functions by the legislature, such as the 310 Streambed Preservation Act, saline seep control activities, and participation in the 208 Sediment Control Program. Significantly, the state has not provided substantive funding support to the Districts for this work. The Districts are generally funded through a maximum 1.5 mill levy in their respective counties, and it is a remarkable circumstance that the outstanding work performed by the Districts has been accomplished despite absolutely minimal funding through the largely voluntary efforts of members. State government has been truly subsidized by the Conservation Districts of Montana. The new programs place an almost intolerable clerical and administrative burden on the Districts and their continued high effectiveness will more and more hinge on the availability of funding to add manpower.

It should be [illegible] Conservation Districts could be locally funded.

It is significant to note that many of the regulatory aspects of natural resource management do not require highly skilled personnel, nor necessarily full time personnel. Duties such as air and water sampling, stream gaging, data collection and organization, clerical duties, citizen contact, resource inventory, etc., create a need to have state employees in every part of the state periodically. Frequently, overqualified personnel are utilized, dispatched at a considerable travel cost from Helena.

Stream gaging requires a reasonable degree of skill or an inordinate amount of supervision to get usable records. The 2 year college course at Spokane Community College seems to produce adequate beginning stream gagers, able to take full responsibility for several stations.

Our experience with citizen contact by non highly skilled personnel has been less than satisfactory

State natural resource management agencies are generally faced with a series of problems which will continue to limit agency effectiveness in assigned mission accomplishment and will eventually produce a deterioration of natural resource assets. Conventional resource management is simply incapable of improving resource utilization and conservation because of these problems, and unless innovative changes in management direction and practice can be identified and implemented, the situation will continue to worsen and costs will continue to climb. Typical of these problems are:

1) increased labor costs within state government
2) stringent manpower ceilings imposed by legislative and executive branch mandate
3) specialization within state job classifications which tends to limit the versatility of use which can be made of employees [illegible]
4) increased administrative burden associated with agency manpower burden
5) increase in manpower intensivity of assigned tasks What?
6) need for broader physical coverage of the state for information or sample gathering, on an increasing scale and frequency.
7) escalating cost of capital equipment needed for mechanization of construction and maintenance functions 9.5% Apr 76 to Apr 77, 111% since 1967
8) over dependence on mechanization with minimization of human interaction, which downgrades innovation in methodology and tend to destroy creativity which could result in cost savings - [illegible]
9) greater travel costs associated with dispatching state employees across the state to obtain information, investigate allegations or claims or conditions, contact citizens, etc. Since such duties are not necessarily continuous, a resident field organization is not necessarily the answer.

[illegible]

In order to better acquaint human resource management personnel with the breadth and detail of natural resource management activities excerpts have been prepared from the Governor's Annual Report - FY 1976 for the Departments of Natural Resources, State Lands, Fish and Game and Health and Environmental Sciences. This material is attached as Appendix B, and its review should serve to stimulate additional ideas for human and natural resource area linkages, beyond those items listed later in this report.

4. THE HUMAN RESOURCE SITUATION OVERVIEW

Montana Human Resource programs are managed by the state Division of Human Resources through Community Action Agencies known as Human Resource Development Councils (HRDC's). The Human Resource Development Council's are local organizations designed to administer, through a series of contracts, the Human Resource Division's anti-poverty program throughout the state. With one exception, the Human Resource Development Council's are local non-profit corporations whose functions and purposes are to assist low-income persons in obtaining the skills and opportunity necessary to make themselves self-sufficient.

The state's ten HRDC's have been designed to be congruent with the Governor's planning districts and to engage in a yearly planning process to ensure the possible benefits to all low-income persons throughout the state. Montana HRDC's are located in Kalispell, Missoula, Butte, Great Falls, Havre, Roundup, Bozeman, Billings, Glendive and Helena.

A district-wide organization, the HRDC's are governed by individual boards of directors comprised of no less than one-third representatives of the poor, one-third public officials and one-third representatives of the private sector, i.e. Kiwanis, Chamber of Commerce, etc.

As program operators for the last decade, the HRDC's and their staffs are well familiar with federal and state programs, requirements and fiscal accounting. They have demonstrated themselves to be effective and responsible conduits for the tax dollar, operating programs in the fields of manpower, early childhood development, family planning, health, food and nutrition, seasonal farmworkers, weatherization and senior citizens.

The primary source of funding for the HRDC programs is from the federal Community Services Administration as set forth in the EOA Act of 1964 and amended in 1967 and 1974. Funds are channelled through the Division of Human Resources of the Department of Community Affairs, which has overall programmatic jurisdiction. Additionally, the HRDC's negotiate locally for funding through city and county governments, as well as the private sector.

Each HRDC develops its own program for its own service area with special emphasis on the economically disadvantaged. Utilizing its own private staff of appropriate social and economic experts, the HRDC's have consistently shown a willingness to participate in innovative programs which will provide job opportunities and economic benefit to constituents. HRDC's have effectively utilized federal CETA positions for such activities as staff workers, outreach personnel, and weatherization specialists. HRDC's have worked closely with the State Employment Service in operating a variety of federally funded manpower programs, particularly in youth oriented programs sponsored by the federal Department of Labor.

This broad representation of the community within HRDC's would make them a natural choice to be used by the state natural resource management agencies in devising or implementing programs designed to provide a beneficial linkage with human resources not only for the poor, but the non-poor as well.

5. IDENTIFIED LINKAGES

During this overview study, the authors conducted numerous discussions with state agency natural resource area managers in order to identify specific potential linkages which could provide work or income opportunity for low income people while benefitting the natural resource area. These contacts were principally with Division Administrators, Bureau Chiefs and Staff in the Department of Natural Resources. While it was originally the Departments' intention to limit the scope of this study to the mission of the Department of Natural Resources, it was later decided to include possible linkage activities of other state agencies concerned with natural resource management. This was done in recognition of the similarity of problems shared by the various agencies, and because the resulting expanded resource area scope provides a broader spectrum of potentially mutually beneficial linkages to both human and natural resource managers. It must be emphasized, however, that specific linkage suggestions made in this report related to agencies other than the Department of Natural Resources have not been coordinated or discussed with representatives of those agencies.

Besides linkage opportunities with governmental agencies, it became obvious that there are numerous economic opportunities in the private sector of natural resource management and utilization. At least some of these are identified in this report.

Much effort was expended in searching for a rationale and possible mechanisms as to why and how successful interaction of human and natural resources could be made. What new enabling factors can be found to insure a reasonable basis for interaction? If government agency bureaucracy--subsidized by the taxpayer--is experiencing increased difficulty and cost in accomplishing its natural resource management mission, how can the situation be improved by adding ingredients such as the chronically unemployed, the underemployed, the handicapped, and the senior citizen? As some unknown wag commented when the Studebaker and Packard automobile firms merged in the 1950's--do two lemons make an orange? The answer to that question can be yes only if creative factors can be found which provide new and synergistic approaches to problems, and if the parties to the union are willing to try the unconventional.

Key issues which keep emerging are:

1) many natural resource tasks require neither high degrees of technical skill. . . ?
nor full time employees But most tasks require some skill, often specialized

2) finding a single full time job with a single employer for low income people may not be a satisfactory solution

3) the administrative burden of hiring part time employees is becoming increasingly intolerable and costly in both the private, business and government sectors. (social security, Workman's Comp, income tax withholding, etc).

4) conventional employment procedures could be improved [illegible]

5) availability of a diversified, versatile and geographically distributed labor pool which can be conveniently acquired for part-time work would be advantageous to many resource management agencies

6) low income people are, for the most part, willing and trainable workers, but their ambition and drive is frequently "turned-off" by encounters with the bureaucratic red tape of conventional hiring procedures [illegible]

7) training for low income people in a common sense technology--appropriate technology--can be provided in local communities at low cost--qualifying people for a broad spectrum of relatively unskilled but important jobs. [illegible]

8) specialized skill training is available to low income people in many areas through vocational-technical schools But it still a cost the same

9) conventional harvest of many natural resource products is necessarily inefficient because of the labor intensivity and related cost of final clean-up. Labor could be provided from the ranks of the low income to glean the otherwise wasted resource if that waste can be converted to a high-dollar-value-added product by individual labor. This is a different concept to me. [illegible]

10) creative use of people power is sometimes more effective in certain natural resource areas than is a high degree of mechanization

11) new natural resource derived products are known, and could be produced in cottage industries but no convenient mechanism exists for coordinating and guiding manufacture, providing for market development and distribution, and insuring quality control. What's wrong with free enterprise? That can handle everything of value [illegible], assuming the product is worthy.

Based on these issues, we prepare the following mechanisms which we believe could be fully developed to provide successful economic linkage between natural resource management and human resource areas.

1) Establishment of low income employee owned business (either for-profit or not-for-profit) which operates at the community level (possibly in linkage with other such businesses located in other communities) as a provider of a broad range of personal services. As a type of specialized employment agency, which is also the employer, the business would offer a broad range of employee services on a part time, full time, or temporary basis to a developed list of service users on a contract basis. A variety of contract types could be used, but in all cases the employee administrative burden is the responsibility of the seller, not the buyer of services.

I doubt if it would be financially advantageous for a low income person to go to work for such a business.

Essential to success of this type of business is management capable of developing and maintaining a broad portfolio of clients and jobs to utilize the available low income resources, and which can provide the efficient internal bookkeeping and personnel management services needed for minimization of administration costs. Improved employee productivity is expected because of employee proprietorship in the business but performance quality and quantity are the responsibility of the business, to insure service user satisfaction. The business must also provide for matching of each job requirement to individual employee skills, as well as for continued training of employees. The business would acquire an inventory of tools, work equipment and transport required for its operation. The ultimate user of the service pays the business either a fixed price or agreed upon hourly rate in a lump sum, while the business pays the salaries of employees. Carefully controled overhead and profit are added as part of the contract price. Competition with existing service providers and recognitionof union situations are potential problem areas which must be carefully considered in the overall management strategy. In this situation, some employee--proprietors would probably be in an "employed" status more often than others, and consideration of equity is important here. It would seem that the HRDC's are initiating vehicle for businesses of this type.

2) Cottage industries are generally recognized as having potential as product They are? producing entities for low income people. They are not now widely successful because the individual cottage industry proprietor is ill equipped to meet competition. We believe that there is an opportunity for a collective or cooperative cottage industry company which would provide certain essential centralized functions to its proprietor members. These functions include product design and development, raw materials procurement and distribution, training, bookkeeping and administration, scheduling, market development, product distribution, quality control, customer relations and marketing. A recent Time magazine article described a similar arrangement in Italy which a very poor example to use here. has been quite successful, although the purpose of its operation was the evasion of taxes, rather than maximization of economic return to the individual cottage industries. There would seem to be many opportunities for such collective manufacture of finished specialty products from natural resource raw products, and again, the HRDC's could be an ideal initiating vehicle for organization. Cottage industries need very special people or huge investment in order to be successful.

3) Re-organization and re-structuring of federal manpower programs to eliminate make-work jobs, simplify and humanize employment procedures, prioritize work assignments to insure accomplishment of important public natural resource tasks while maximizing economic exposure of people to the resource environment, reconsideration of arbitrary time limits on employment, providing improved supervision mechanisms, and providing for multiple, changing work assignments to individual employees to broaden the experience and overcome job monotony. This ¶ sounds like it was written by planners. What does it say?

¶ One thing I think it says is that we need federally subsidized jobs with no time limits in order to make this whole thing work.

[illegible] this will [illegible]

These concepts are not fully developed, inevitably have conceptual flows and require almost inspired management to insure viability and are not exhaustive. However, we believe they are workable concepts capable of de-bugging and ultimate success.

Tables I through V summarize the specific potential linkages of human resources and natural resources which we have initially identified in this brief study. The items listed in each natural resource category represent a broad range of viabilities--some are highly likely, while others face many problems and potential barriers to be practical. The listing is not exhaustive, but do indicate a wide spectrum of opportunity. For each linkage item listed under Description, identification is made of the government agency which would be expected to have cognizance and with which follow-up should be made. Potential funding sources for each item are identified as well as the probable location of the job opportunity. A very crude estimate is made of the number of jobs which might result from exploitation of the potential linkage, although the jobs may or may not be full time positions. Some items are suitable for individual implementation while others are more suited to a community based business or HRDC approach, or to both. This is indicated for each potential linkage under the column headed "Type of Work Opportunity". Where the business approach seems more probable, a double X (XX) is listed in that column. Finally, an estimate of the competition with existing business situation is provided for each linkage.

Unfortunately, there are probably no "easy" linkages identified in this list, though some are probably "easier" than others. It would seem that the burden is on the human resource management community to initiate action on most of the listed items. The starting point is obviously synthesis of a workable mechanism or strategy along the lines discussed earlier in this section.

There are many barriers which will be raised in the natural resource management area to implementation of significant human resource interactions. Some of these barriers are real with legal or funding restrictions, while others are imagined or have an institutional or turf-protective aspect. One factor in favor of the suggested linkages is the mandate for state agencies to increase contracted out services to the private sector as expressed by the legislature in HJR 58 of the 1977 Montana legislative session. Despite this, the human resource manager must bridge a credibility gap and convince the natural resource manager that low income human resources can be cost-effectively utilized to accomplish portions of agency missions. Once credibility is established, there is little doubt that real and substantial job opportunities exist for low income people in the natural resource area.

The most important key. I've seen nothing to convince me so far.

[illegible]

TABLE I
POTENTIAL LINKAGE MATRIX

NATURAL RESOURCE AREA	DESCRIPTION	COGNIZANT AGENCIES	POTENTIAL FUNDING SOURCES	PROB. LOCATION	ESTIMATE OF JOB POTENTIAL *	TYPE OF WORK OPPORT. INDIV.	BUS. **	COMPETE WITH EXISTING BUSINESS
WATER RESOURCES	1. OPERATION OF STATE WATER PROJECTS (DALY DITCHES)	DNR&C	DNR&C PROJECT INCOME	HAMILTON AREA	10-20		X	-NO
	2. OPERATION OF STATE WATER PROJECTS UNDER SUB-CONTRACT TO WATER USERS ASSNS'	DNR&C, WATER USERS ASSNS'	WATER USER ASSNS'	STATEWIDE	20-30 PROB. 100 MAX.	X	X	-NO Yes-Existing [illegible]
	3. OPERATION OF PRIVATE WATER PROJECTS	PRIVATE IRRIGATION CO.	WATER PROJECT	STATEWIDE	20-50 PROB. N 200MAX	X	XX	-NO
	4. MAINTENANCE OF STATE OR PRIVATE WATER PROJECTS (DITCH-LINING, BRUSH CUTTING, RECREATION AREAS, RIP-RAPPING, LANDSCAPING	DNR&C, PRIVATE, WATER USER ASSNS'	CETA, OTHER FED, STATE, PRIVATE	STATEWIDE	50-200	X	X	-NO [illegible]
	5. CONSTRUCTION OF SMALL OFF-STREAM STORAGE PROJECTS, STOCK-WATERING PONDS, IRRIGATION WORKS	DNR&C, PRIVATE INDIV., CONS. DIST.	CETA, OTHER FED., STATE, PRIVATE	STATEWIDE	100-1000	X	XX	YES
	6. INSTALLATION OF SMALL SCALE (N 1-3 KW) HYDROELECTRIC SYSTEMS	PRIVATE INDIV.	PRIVATE	WESTERN MONTANA	10-50	X	XX	-SOME YES
	7. CLERICAL SUPPORT OF WATER RIGHTS ADJUDICATION (EXISTING)	DNR&C	STATE, CETA	STATEWIDE	20-200	X	X	NO
	8. CLERICAL SUPPORT OF NEW WATER RIGHTS ADJUDICATION (e.g. SECURING OWNERSHIP, CARD PUNCHING, FILING, ETC.)	DNR&C	STATE, CETA	STATEWIDE	10-50	X	X	NO
	9. OPERATION OF RAIN GAGE NETWORK FOR HIPLEX UNDER CONTRACT TO HRDC	DNR&C, BU. REC.	FED. CONTRACT	MILES CITY	5-10		X	NO
	10. MANUFACTURE OF PRE-FABRICATED IRRIGATION DITCH LINERS	PRIVATE DNR&C	PRIVATE, STATE	STATEWIDE	10-100		X	-MINOR- YES - Entirely
	11. WATER COMMISSIONERS, ASSISTANTS	STATE COURTS	CETA, STATE	STATEWIDE	5-20	X	X	-NO - YES
	12. SAMPLING OF WATER FOR QUALITY, STREAM AND SNOW GAGING	DNR&C, HES, FED.	CETA, STATE, FED.	STATEWIDE	10-100	X	X	-MINOR- YES
					[illegible] = 675 FTE			

*NOT NECESSARILY FULL TIME
**BUSINESS COULD BE SMALL FIRM, COMMUNITY BASED LOW INCOME FIRM OR HRDC

[illegible] = 2050 FTE [illegible] = $25,554,000/yr
[illegible] $42,640,000/yr

TABLE II
POTENTIAL LINKAGE MATRIX

NATURAL RESOURCE AREA	DESCRIPTION	COGNIZANT AGENCIES	POTENTIAL FUNDING SOURCES	PROB. LOCATION	ESTIMATE OF JOB POTENTIAL	TYPE OF WORK OPPORT. INDIV.	BUS.	COMPETE WITH EXISTING BUSINESS
AGRICULTURE	1. CLERICAL SUPPORT FOR 59 CONSERVATION DISTRICTS	DNR&C	CETA, COUNTIES	STATEWIDE	10-80	X	X	NO - Yes [illegible]
	2. LABOR POOL FOR FARMS AND RANCHES (POOL MANAGED BY HRDC'S OR COMMUNITY BASED BUSINESS)	HRDC'S PRIVATE RANCHERS	PRIVATE	STATEWIDE	100-2000		X	NO - Yes - [illegible]
	3. ADMINISTRATIVE SUPPORT AND MONITORING OF STREAMBED PRESERVATION PROGRAMS FOR CONSERVATION DISTRICTS	DNR&C, CONS. DISTS.	CETA, STATE	STATEWIDE	10-60	X	X	NO - Yes - [illegible]
	4. COTTAGE TRUCK GARDENING BUSINESS IN SOLAR GREENHOUSES	PRIVATE	PRIVATE	STATEWIDE	10-100	X	X	YES
	5. COMMUNITY BASED BUSINESS MANUFACTURING SOLAR GROWN & PROCESSED FOOD ITEMS	PRIVATE	PROCEEDS	STATEWIDE	10-100	X	XX	SOME - [illegible]
RECREATION	1. MAINTENANCE OF STATE RECREATION AREAS	F&G, DNR&C	CETA, STATE	STATEWIDE	50-200	X	X	SOME - Yes
	2. CONSTRUCTION OF STATE RECREATION AREAS	F&G,	CETA, STATE	STATEWIDE	10-100		X	SOME - Yes
	3. CONSTRUCTION OF FOREST TRAILS UNDER FED CONTRACT TO HRDC OR COMMUNITY BASED BUSINESS	U.S. FOREST SERVICE	FED	WESTERN MONTANA	10-100		X	NO - Yes
	4. MAINTENANCE, CONSTRUCTION, IMPROVEMENT OF CITY AND COUNTY PARKS	CITIES COUNTIES	CETA	STATEWIDE	20-300	X	X	SOME - Yes
	5. COMMUNITY BASED BUSINESS MANUFACTURING PICNIC TABLES, BENCHES, PLAYGROUND EQUIP. FROM SALVAGE FOREST PRODUCTS FOR SALE TO FEDS, STATE, CITIES, COUNTIES.	PRIVATE	PROCEEDS ECON. DEVE. LOAN	STATEWIDE	10-50	X	X	SOME - Yes

[illegible]

TABLE III

POTENTIAL LINKAGE MATRIX

NATURAL RESOURCE AREA	DESCRIPTION	COGNIZANT AGENCIES	POTENTIAL FUNDING SOURCES	PROB. LOCATION	ESTIMATE OF JOB POTENTIAL	TYPE OF WORK OPPORT.		COMPETE WITH EXISTING BUSINESS
						INDIV.	BUS.	
FORESTS	1. FOREST AND WILD FIRE FIGHTING TEAMS (UNDER HRDC SPONSORSHIP)	DNR&C, U.S. FOREST SVC. COUNTIES	CETA, STATE, FED. COUNTY	WESTERN MONTANA	30-200		X	NO
	2. MAINTENANCE OF RECREATION AREAS IN STATE AND FEDERAL FOREST CAMPGROUNDS	DNR&C, U.S. FOREST SVC.	CETA, STATE, FED.	WESTERN MONTANA	10-30	X	X	SOME → Yes
	3. RECLAMATION OF BURNED OR LOGGED FOREST AREAS (RE-PLANTING, SEEDING, EARTH WORK)	DNR&C, U.S. FOR. SVC., PRIVATE	CETA, STATE, FED. PRIVATE	WESTERN MONTANA	20-100		X	SOME → Yes
	4. LOGGING SLASH REMOVAL OR REDUCTION	DNR&C, FOR. SVC. CORPORATE, PRIVATE	CETA, STATE, FED, PRIVATE	WESTERN MONTANA	10-100	X	X	YES
	5. HARVEST AND SALE OF FIREWOOD FROM STATE, FED. AND PRIVATE FOREST TRACTS	DNR&C, FOR. SVC, CORPORATE PRIVATE	PROCEEDS OF BUSINESS	WESTERN MONTANA	10-100	X	X	YES
	6. MANUFACTURE OF PRODUCTS (e.g. FURNITURE PICTURE FRAMES, DEC. ITEMS) FROM FOREST WASTE PRODUCTS AND DEAD AND DOWN PRODUCTS	PRIVATE	PROCEEDS OF BUSINESS ECON. DEV. LOANS	WESTERN MONTANA	10-300	X	X	SOME → Yes
	7. COTTAGE INDUSTRY GROWING OF SEEDLINGS FOR FED, STATE, CORPORATE AND PRIVATE FORESTS	DNR&C, FOR. SVC., BLM, F&WL, F&G, LANDS, CORPORATE, PRIVATE	PROCEEDS OF BUSINESS ECON. DEVE. LOANS	STATEWIDE	10-200	X	X	YES
	8. MANUFACTURE AND INSTALLATION OF CELLULOSE INSULATION FROM WASTE FOREST PRODUCTS	PRIVATE	PROCEEDS OF BUSINESS ECON. DEV. LOANS	WESTERN AND CENTRAL MONT.	10-50	X	X	YES
	9. COMMUNITY BASED CORPORATION TO PROVIDE THINNING CREWS FOR FED STATE AND PRIVATE FOREST OPERATIONS	DNR&C, FOR. SVC., PRIVATE	CETA, FED., PRIVATE	WESTERN MONTANA	20-200		X	SOME → Yes
	10. COMMUNITY BASED CORP. WHICH RETRIEVES, PROCESSES AND DISTRIBUTES WASTE FOREST PRODUCTS FOR HOME HEATING OF LOW INCOME HOMES	HRDC, SRS, DNR&C	CETA, CSA, SRS	WESTERN&CENTRAL MONTANA	50-300		X	MINOR → Yes

TABLE IV
POTENTIAL LINKAGE MATRIX

NATURAL RESOURCE AREA	DESCRIPTION	COGNIZANT AGENCIES	POTENTIAL FUNDING SOURCES	PROB. LOCATION	ESTIMATE OF JOB POTENTIAL	TYPE OF WORK OPPORT. INDIV.	BUS.	COMPETE WITH EXISTING BUSINESS
FISH AND GAME	1. COTTAGE INDUSTRY RAISING FISH AND GAME PLANTING STOCK (UNDER DEPT. F&G SUPERVISION), USING SOLAR HEATED BLDGS.	F&G	CETA, STATE, FED, PRIVATE	STATEWIDE	10-100	X	XX	SOME [illegible]
	2. SAMPLING, OBSERVING, RECORDING FISH AND GAME; POLLING, MONITORING HUNTERS AND FISHERMEN FOR DATA COLLECTION FOR RESEARCH PROJECTS	F&G	CETA, STATE, FED.	STATEWIDE	10-100	X	XX	NO [illegible]
	3. COTTAGE INDUSTRY RAISING FUR-BEARING ANIMALS FOR PETS	PRIVATE	PROCEEDS	STATEWIDE	10-100	X	XX	YES
ENERGY	SEE FOREST 10, WATER RESOURCES 6, FORESTS 5, FORESTS 8,							
	1. MANUFACTURE OF SOLAR HEATING DEVICES	PRIVATE	PROCEEDS ECON. DEV. LOAN	STATEWIDE	20-200	X	XX	SOME [illegible]
	2. MANUFACTURE AND INSTALLATION OF WIND POWER PUMPS AND ELECTRIC GENERATORS	PRIVATE	PROCEEDS ECON. DEV. LOAN	STATEWIDE	10-100	X	XX	SOME [illegible]
	3. SERVICE BUSINESS COLLETING PERFORMANCE DATA ON RENEWABLE ENERGY SYSTEMS, CONSERVATION PROGRAMS, ETC.	ENERGY OFFICE DNR&C	CETA, STATE, FED	STATEWIDE	20-100	X	X	MINOR [illegible]
	4. COMMUNITY BASED BUSINESS, FUEL SUPPLY, COAL, WOOD	PRIVATE	PRIVATE	STATEWIDE	10-50	X	XX	YES
	5. SERVICE BUSINESS READING GAS, ELECTRIC METERS FOR UTILITIES, CURSORY INSPECTION OF LINES AND FACILITIES	UTILITIES	PRIVATE	STATEWIDE	20-200 [illegible]	X [illegible]	XX	YES [illegible]

TABLE V
POTENTIAL LINKAGE MATRIX

NATURAL RESOURCE AREA	DESCRIPTION	COGNIZANT AGENCIES	POTENTIAL FUNDING SOURCES	PROB. LOCATION	ESTIMATE OF JOB POTENTIAL	TYPE OF WORK OPPORT. INDIV.	BUS.	COMPETE WITH EXISTING BUSINESS
MINERALS	1. ASSISTANCE TO BU. MINES & GEOL. IN MONITORING LEVELS OF TEST WELLS, OTHER HYDROGEOLOGICAL INVESTIGATIONS, DATA GATHERING AND PROCESSING FUNCTIONS.	BU. MINES & GEOLOGY	CETA, FED., STATE	STATEWIDE	5-20	X	X	NO
	2. COTTAGE INDUSTRY MANUFACTURING JEWELRY, SAMPLES, DECORATING ITEMS FROM MINERALS	PRIVATE	PROCEEDS	STATEWIDE	10-50	X	X	YES
AIR	1. ASSISTANCE IN OPERATION OF AIR QUALITY MONITORING PROGRAMS, DATA GATHERING & PROCESSING, MAINTENANCE	HES	FED., STATE, CETA PRIVATE	STATEWIDE	10-100	X	X	SOME
	2. ASSISTANCE IN OPERATION OF METEOROLOGICAL MONITORING STATIONS, DATA GATHERING AND PROCESSING, MAINTENANCE	HES, FAA, DCA	CETA, FED., STATE	STATEWIDE	10-100	X	X	SOME
	3. MANUFACTURE OF SIMPLE METEOROLOGICAL AND AIR QUALITY INSTRUMENTS	PRIVATE	FED., STATE, PRIVATE	STATEWIDE	10-50		X	YES

6. SPECIAL CASES

[illegible]

APPROPRIATE TECHNOLOGY STATEMENT

I. Our society, built on cheap non-renewable resources supporting massive centralized institutions that service a dependent, over-consuming urban population, is breaking down. The principles, values and institutions that served a society during a period of rapid growth now need careful evaluation to determine what changes are desirable for our new conditions of resource scarcity.

Until now we have been able to afford incredibly wasteful and expensive systems without taking into account their true costs. In the future, this will be less feasible. It is clear that stable employment and a high quality of life do not follow from waste and excessive energy use. Change becomes desirable long before actual depletion occurs--when resources are finally perceived as limited, when the availability of energy decreases, and when the rate of real growth is no longer sustainable. The earlier a transition to more sustainable patterns of resource use is begun, the more time and resources are available to make the transition. This minimizes social and economic disruption.

No one knows what the future will look like, but some of its features are apparent. We will have to get along with vastly reduced energy budgets, and many stocks of essential minerals will have been used up. This means that mass institutions and economies based on cheap energy and resources are going to be transformed, regardless of our value system. Indeed, this process is already underway. Massive, mono-cultural institutions simply cannot run without infusions of cheap energy. Our future technology will depend more on a harmonious management of natural systems and human capabilities and less on the gross exploitation of material resources and people. Our patterns of habitation, production and use will tend to be smaller, more coherent and more interdependent with the ecosystem in which they are embedded. People will depend more on their own energy and less on machines and fossil fuels. Recycling of non-renewable resources will be a way of life. Our forms of community will hopefully be more interdependent with each other and less dependent on massive, unresponsive and non-responsive corporate forms.

One can picture another scenario: as things become tighter and fear grips the dependent urban mass, large corporations and governments assume total control, doling out ever thinner slices of a dwindling pie, and spending ever more to maintain control and order in an inherently unstable situation. (Witness the recently released report by the CIA).

The purpose of the Montana Institute of Appropriate Technology will be to nurture and encourage technology appropriate to sustain a society of finite resources to a human scale.

The only things in Section I that I think I understand, I don't think I agree with

The establishment to the Montana Institute of Appropriate Technology will be a counterweight to the tendency of present procedures to subsidize and favor large-scale, expensive and wasteful forms of technology over more modest and frugal ones. It would give crucial support and sanction for saner, more prudent technology.

Appropriate Technology flourishes without the extensive use of fossil fuels andother non-renewable resources that are the foundations of today's technology. We can enhance our survival capacity and ease the transition to lighter living by building into our system a pool of basic survival intelligence, networks of skills and resources that can still function when massive, centralized systems are disrupted. Appropriate Technology already offers employment options in redesigning energy processes and expanding capabilities for meeting societal needs. It can also offer us some insight into how to make available more services at decreasing cost, both in terms of human and non-human energy.

II. Features of an Appropriate Technology

The features of an appropriate technology are emerging in three areas:

1. a more integrated and steady-state relationship between the man-made and the natural environment, so we do not overpower the self-healing capacities of natural systems to maintain themselves and support life;

2. developing social, economic and environmental diversity so that communities and regions can provide for many of their own needs without putting all their eggs in the single shrinking basket of imported and diminishing resources; and

I believe that
this requirement
[illegible]
of the [illegible]

3. creating and managing systems that require less capital, less outside energy, less machine-watching and paper shuffling, but more personal involvement and direct production.

The great material advances of the past century were gained at the expense of using up the bulk of our non-renewable resources and degrading the biological and ecological basis for life. Appropriate technology implies a more intricate understanding and relation with natural systems, in a harmonious pattern of human environment and nature--a process often termed "biotechnics". Appropriate technology will be concerned with closing the loops in existing design that result in the waste and misplacement of resources that is at the heart of pollution and damage to ecosystem and biosphere.

Along with scale comes the use of capital and energy. Our future is dependent on reducing our capital requirements and moving towards a consumption level that need not be entirely supported by removing and converting one-time resource stocks into today's wealth.

This may prove to be false

III. Areas for Applying Appropriate Technology

Here are examples of how Appropriate Technology can be put to work now:

1. Conversion of raw materials to finished products on site, e.g., low-cost, portable saw mills make it possible for small land owners to do selective logging and produce finished lumber and other products without having to clear-cut or use heavy equipment. (Particularly incorporated into Montana Homestead Act). [illegible]

2. Door-to-door pick-up of home-sorted waste for composting and recycling. (The ORE System in Portland is operating and it shows this to be ecomomically feasible now). This works in [illegible], too, if it's done right.

3. Composting and solid waste recycling in municipal dumps.

4. Eliminating unnecessary packaging and disposable bottles. (The Oregon experience shows re-emergence of local bottling plants, less litter, lower costs.) [illegible] Price of Coke [illegible] in Oregon vs. [illegible] in Montana and all the Western States.

5. Recycling of industrial waste.

6. Reduction of water use in agriculture through less mono-cropping, more crop diversification and mulching.

7. Domestic water conservation through use of native vegetation in gardens and public landscaping projects, and with waterless toilets.
   Not a water conservation measure on a nationwide scale.

Food Production

1. Urban agriculture on vacant lots, backyards.

2. Intensively farmed truck gardens on city fringes, state lands--all of these and other plans reducing transportation, distribution and packaging costs.

3. Providing community and neighborhood space for farmers' markets.

4. Aquaculture protein production in open water and backyards using low-grade organic wastes and sun to feed aquatic food chains (some fresh-water shrimp grow to two-pound size in seven months).

5. Using dairy waste to produce methane to generate electricity and fuel to run a dairy, with sludge used to improve pasture. Very inefficient - and it would get worse as fuel costs rise.

Housing and Domestic Energy Consumption

1. Retrofitting old houses with solar water heaters, insulation, efficient food preparation and storage areas.

2. Recycling old buildings rather than using the wrecking ball and the dump. Often more expensive, but more fun & sentimental. — [illegible] values.

3. Use of natural and recycled materials such as earth blocks and used lumber. Used lumber is usually very expensive to use & unfinished, [illegible].

4. Climate-adaptive design to reduce need for artificial hearing and cooling; use of vegetation and trees to reduce heat load in summer.

5. Owner building and self-help housing. [illegible]

6. Shared and multi-use services. (Much space and services are used very little in the average four-person household.)

Industry

1. Managerial sabbaticals, where executive, professional and technical people take the year off to assist small private and community enterprise.

2. Local mini-plants producing semi-finished materials (cement, brick, chipboard, egg cartons) with less automation, more personal involvement. E. F. Schumaker documents that mini-plants can operate at the same capital/output ratio as centralized operations, with one to two percent of the current economic minimum size, employing four times as many people with less energy use.) Our list can be extended to other areas, such as Education and Health care.

The following program description of a Montana Institute of Appropriate Technology was developed in relation to Section IIA-4 of the contract between DCA/DNR&C, it includes:

1. Project Summary
2. Problem and Need Statement
3. Long Term Objective
4. Short Term Objective
5. Beneficiaries
6. Project Development
7. Work Program
8. Organizational Statement
9. Physical Plant Development
10. Resource Mobilization Statement
11. Program Development Statement
12. Work Program Analysis

During the review of assets of state owned Water Projects, the availability of extensive building facilities (a complete set of ranch buildings), central location (50 miles from Helena), available land area; physical environment favoring development and demonstration of renewable energy sources, and relationship to a water project which could benefit from human resource interaction (spillway repair, lining of canals, brush cutting, recreation area maintenance), all at the Nevada Creek State Water Project, led to its selection as a potential human/natural resource demonstration project.

Extensive discussions with the state Energy Office, Governor's Office of Commerce, and Community Action Directors of Montana; led to the concept of a low income oriented Appropriate Technology Center at the Nevada Creek site. Initially, the concept involved state government management of the Center, but by executive decision of the Department Director, the emphasis was shifted to organization and management of the Center by a private non-profit corporation, leasing the facility from the Department.

The following information was prepared to describe the activities and programs envisioned for a Montana Center for Institute of Appropriate Technology, as documentation for proposals seeking support from federal or federally supported agencies.

PROJECT SUMMARY

Instruction: Provide a summary of the proposed project, identifying the needs to be addressed and the work activities to be carried out.

A. An Appropriate Technology and Energy Conservation Learning Center located at the Nevada Creek Ranch.

1. Demonstration of Testing of energy efficient and renewable resource family farm sized agricultural technology.

2. Residential training for state employees, local government employees, citizen leaders, and private non-profit organization employee's and board members on energy management, local energy planning, low cost renewable resource technology, and community development.

3. Special seminars for elected decision-makers, representatives of private sector interests, and educators on specific technological/social development issues.

B. Information Transfer office located in Helena for the purpose of coordination and scheduling.

1. Library - Visual - Audio - Publication

2. Back up Technical Assistance

3. Documentation and Distribution of Montana's Appropriate Technology projects "Publish Results"

4. Mobolize Resources for Expansion at local Appropriate Technology projects

5. Stimulate the introduction of Appropriate Technology Methodology into on-going decision-making and educational curriculum development.

C. Renewable Alternative Energy Research, Development, and Demonstration Program (S.B. 86).

1. Determine critical areas of Research and Demonstration needed to accelerate the commercialization of Renewable Resources Technologies.
2. Identify and mobolize support for Second Generation Proven Appropriate Technology Resource projects, for the eventualization of wide-scale implementation.
3. Initiate efforts to remove institutional, regularity, and legal barriers to appropriate technologies.
4. Mobolize resources for projects that qualify as appropriate technology but not for funding under S.B. 86.

PROBLEM AND NEEDS STATEMENT

Summarize the problems and needs to be addressed. Indicate the data source on which they are based (census data, technical surveys and plans, etc.)

---

1. Limited availability of hands on experience with available appropriate technology: Montana CAA's and the Human Resources Division under the leadership of Dan Newman pioneered the first residential training program on appropriate technology geared to the needs of community workers on a joint venture basis with Malcom Lillywhite of Domestic Technology Institute in Evergreen, Colorado, during the summer of 1976. Despite the success of this effort in concrete community terms over the past year, both fiscal and physical limitations dictate the development of more decentralized and economical approaches to providing low income and community action staff members with the confidence and capability to initiate their own projects aimed at community self-reliance. For example, the current costs of participation in the DTI Community Energy Engineer Internship Program range from $490 to $560 per person for CAA's located in Montana. In practical terms this means that only one person per year per CAA can attend the DTI program. Nearly half of this amount is for travel to and from Colorado.
2. Underutilization of public resources to develop and promote energy conservation and appropriate technology: The response of state and local governments to emerging social crises has

typically followed a carrot and stick pattern. The federal government provides carrots which create bureaucracies which eventually wield sticks upon the shoulders of innocent citizens. Setting aside questions about the continued viability of this approach to problem solving, its impotence is perhaps most apparent in past and current efforts to deal with energy consumption and technology. Nearly four years after the oil embargo, the Community Services Administration Emergency Energy Conservation Program still remains as the only visible locally operated energy conservation program on a national basis. With all its faults and needs for enrichment, what it has managed to do is to mobolize a wide variety of pre-existing public resources into an integrated local effort to solve a problem (e.g. Title XX, HUD/CDA, FHA, CETA, Title X DOC, LEAA). In contrast the agencies and departments nominally responsible for energy policy and problem solving (FEA-ERDA) have continued to pursue strategies which fragment and specialize responsibility for problem solving. Action is tied to the receipt of new dollars specifically earmarked for a problem. On a yearly basis, federal outlays in Montana exceed one billion dollars or nearly $800 for every man, woman and child. Redirection of these dollars to support energy conservation and appropriate technology solutions is a priority for persons sensitive to future resource shortages.

3. Lack of state government participation in creating institutions responsive to the energy related needs of their own low and marginal income citizens: This problem is not unrelated to the underutilization of public resources to promote energy conservation

and appropriate technology. Within the framework of the "New Federalism" typified by revenue sharing and related block grant programs state governments occupy a pivotal and critical position in determining the direction and quality of federally supported efforts intended to promote social equity, particularly in rural and semi-rural areas. In combination with other pre-existing state resources--undeveloped land, abandoned buildings, equipment, idle technical expertise, direct access to regulatory mechanisms--and flexibility provided by the block grant and revenue sharing federal aid programs has the potential of providing a major endowment for self-help community development efforts based on energy conservation and appropriate technology. Only a limited number of states have managed to move in this direction--California's Office of Appropriate Technology is the best known example. At least two types of barriers operate to inhibit state governments from pursuing this type of program development--one is political and the other is technical. The Montana Institute for Appropriate Technology will concentrate on developing and demonstrating models for overcoming the technical barriers to greater state government participation in creating institutions and community development efforts supportive of energy conservation and appropriate technology. Several other states--Florida, Pennsylvania, Colorado, North Dakota--have expressed interest in establishing institutions similar to MIAT and Congressperson George Brown of California has introduced legislation which would make funds available to states for a comparable demonstration project (H.R. 820).

4. Lack of on-going organized technology delivery and evaluation system focused on the needs of low income persons: Recent increases in appropriations for low income weatherization assistance and consequent liberalization of limits of expenditures on each dwelling have opened up a new range of technological options for CAA's. CAA's now have the wherewithal to begin providing more sophisticated solutions to the home heating problems of low income persons. Unfortunately this has occurred at a time when they are also under pressure to complete a Crisis Intervention Program and greatly expand their staff levels. MIAT will focus on creating a mechanism to build the capability of low income workers in the weatherization program to carry out more sophisticated energy conservation measures.

LONG-TERM OBJECTIVE

Describe long-term objective designed to address the identified problems and needs. Long-term objectives are those to be addressed in more than three years as a result of the proposed project.

---

1. Formation of 50 working groups composed of low income persons, technical innovators, resource mobilizers, and small business persons dedicated to developing plans for energy self reliance for their communities by the year 2,000. (One group in each Montana Senatorial District).
2. Establishment of four additional learning centers on unused or under-utilized state lands in other parts of Montana focused on local needs.
3. Establishment of a rural and small business development credit authority and land homesteading authority dedicated to promoting the utilization of publically owned natural resources for community based economic development and labor intensive management of renewable resources.
4. Establishment of similar Appropriate Technology Development mechanisms by other states.

SHORT-TERM OBJECTIVE

Describe short-term objectives designed to make measureable progress against the identified problems and needs, over a period of up to three years.

---

1. Establishment of a balanced broadly represented Board of Directors committed to the principles of Appropriate Technology and the better utilization of publicly-owned resources.
2. The rehabilitation of the buildings on the site of the learning center.
3. The identification of potential resource persons to serve as learning team associates at the center.
4. The consolidation of up to date information on existing appropriate technology efforts in Montana.
5. The negotiation of a Governor's Executive Order mandating in-service training in energy and energy conservation for state employees with related responsibilities.
6. Identification of and negotiation with potential long-term sources of financial support.
7. Preliminary design of model learning units based upon the express needs of the constituencies to be served.

BENEFICIARIES

Identify the target population to be benefited directly by project and what the effects of the project will be on the broader community.

A.

1. Private non-profit corporations principally community action agencies.
2. Low income, self-help groups.
3. Senior citizen organizations.
4. Public employees with the responsibility for energy conservation.

B. A better community understanding of energy and conservation and individual self-reliance.

PROJECT DEVELOPMENT

Identify how the project was originated, what groups and agencies participated in its development, and if the applicant is not a Community Action Agency or Community Development Corporation, what is the relationship between the applicant and such agencies?

A. 1. A need for the Montana Institute of Appropriate Technology was identified in the process of developing the Montana Energy Extension Service proposal. The funds available from ERDA for the development of this proposal while seemingly large, were not sufficient to the task. Additionally, the approach implicitly mandated by ERDA in the (PRDA) tended to isolate, fragment and professionalize the functions of outreach and counseling (technology transfer) on the topics of energy conservation and renewable resource technology.

B. 1. The Montana Institute of Appropriate Technology will take people in place, develop their capabilities to provide the services of outreach and counseling by further developing their skills in energy conservation and the development of new disciplines in appropriate technology. At the same time, utilizing existing linkage and on-going networks of delivery.

2. Introduce, and intergrate concepts of appropriate technology into on-going activities managed by the organizations (CAP's).

WORK PROGRAM

Describe in detail the work to be done under this proposal. For technical purposes, include specifications, performance characteristics, plans, and other details as appropriate. Append technical plans and additional pages as necessary.

The ranch, located 49 miles northwest of Helena on 670 acres of land, owned by the Department of Natural Resources and Conservation will become the Montana Center for Appropriate Technology Learning Center. The ranch includes eleven (11) buildings, nine (9) of which will be saved for the center's physical needs. All of the buildings, though structurally sound, are in need of rehabilitation. The rehabilitation will start the week of June 20th and utilize CETA employees through a grant with the Governor's Manpower and Training Council.

The large house in two-story with five (5) rooms upstairs and six (6) rooms downstairs including the kitchen and pantry. This building will become the learning center. There is electricity throughout, including 220 volt outlets for an electric stove and an electric dryer. The wiring may have been replaced because there are baseboard outlets and a circuit breaker box. There is plumbing including a clothes washer hook-up, but the conditions of the pipes, especially the ones from the well to the house would be very questionable. There is no water heater or kitchen appliances in the house. There is a telephone and three (3) hook-ups for fuel oil heaters on the main floor. None of the windows are broken out so the weather is not deteriorating the interior. The house is principally in good shape and could quite easily be made liveable.

Of the four (4) smaller houses, two (2) have more recently been used as chicken coops and horse sheds. The remaining two (2) are small two-room buildings with electricity and circuit breakers but without plumbing. The two (2) houses we intend to use as bunk houses, once the center is established. The remaining out buildings consist of log sheds, wooden sheds and smaller type barns. The buildings seem to be structurally secure and many have electricity. They have served for various uses throughout the years and if used again, would have to be cleaned up. Generally speaking, the buildings are in fair condition with the main house being in the best condition.

It is the intent of the Montana Institute of Appropriate Technology to start immediately on a rehabilitation program for the physical buildings at the site of the learning center. Ten (10) CETA labor employees will be utilized for this rehabilitation work which will include (A) a complete rehabilitation of the main house which will become the learning center, to include plumbing, new bathroom fixtures, modernized kitchen, inside and outside painting, and general maintenance necessary to bring the building up to standards, (B) enclosing the property with pole post and pinned type fencing which will be conducive to the natural setting, (C) rehabilitation of two (2) bunk houses by painting, plumbing, rewiring and general maintenance, (D) rehabilitation of the main shop building, in which the hands on learning experience conducted at the center will take place, (E) rehabilitation of the large barn to be later utilized in the self-sufficiency of the learning center.

The work to be done with the funds requested by this proposal falls into four categories: Organizational; Physical Plant Development, Resource Mobilization; and Program Development. The funds requested under this proposal are seed money for the implementation of an on-going technology delivery system that will be integrated into community development efforts currently being carried out or projected in the state of Montana. Approximately 20% of the funds will support organizational activities, 30% will support physical plant development, 30% will support resource mobilization, and 20% will support program development. The projected operational budget for the project after the completion of the work to be carried out under this proposal will be approximately $300,000 on an annualized basis. $120,000 of this amount will be generated from CETA Title I funds, $25,000 from contracts with the Western Region SERI; $50,000 from Montana HRDC's; and $105,000 from tuition and charged to state and local government employees.

ORGANIZATIONAL

1. Incorporation of a private non-profit corporation governed by a balanced broadly representative Board of Directors committed to the principles of Appropriate Technology and the utilization of publically owned natural resources for community development. Projected composition, Senior Citizen; Native American; Organized Labor; Educator; CAA Director; Local Elective Official; Inventor; AT Communicator; Family Farmer; Small Business. September 1, 1977

2. Negotiation of long term lease with the Montana Department of Natural Resources for the utilization of the Nevada Creek Reservoir property as a renewable resource and small scale agricultural demonstration and learning center. September 15, 1977.

3. Negotiation of an Executive Order mandating in-service training on energy conservation and appropriate technology for state employees dealing with the public on a regular basis. October 1, 1977.

4. Negotiation of agreements with potential resource persons to serve as learning team associates for weatherization and employees, state employees and local government employees. September 30, 1977.

5. Negotiation of agreements for orientation, in-service, and staff development services for HRDC energy personnel. September 1, 1977.

6. Negotiation of agreement with AERO for the utilization of a portion of the Nevada Creek Learning Center as winter headquarters for the New Western Energy Show. October 1, 1977.

7. Establishment of advisory panels on the following topics: Owner Built Low Cost Housing; Family Farm Agricultural Technology; Wind Technology; Hydro Technology; Bio-mass technology; Solar Heating and Cooling Technology; Small Business Development; Heating Efficiency Technology; Waste Recycling Technology; Communications Technology; Controlled Environment Food Production. January 1, 1978 and on-going. [illegible]

8. Negotiation of arrangements for accreditation of in-service training with recognized college or university. October 1, 1977.

9. Staffing and establishment of Helena based office. August 23, 1977.

10. Establishment of accounting systems and development of projected revenue and expenditure prospectus. August 30, 1977, on-going.

PHYSICAL PLANT DEVELOPMENT

1. Completion of general rehabilitation, clean up, plumbing, and landscaping necessary to begin residential training. September 15, 1977.

2. Relocation and orientation of one barn to serve as a solar reliant greenhouse to house New Western Energy Show during winter months. October 1, 1977.

3. Development of Designs for 20 person-50% passively heated dormitory bathhouse. September 30, 1977.

4. Complete remodeling of kitchen. September 15, 1977.

5. Excavation and foundation retaining wall for dormitory completed. December 1, 1977.

6. Renovation of outbuildings to accommodate livestock. February 15, 1977.

7. Shell for dormitory complete. January 1, 1978.

8. Plumbing and wiring for dormitory complete. February 1, 1978.

9. Interior work on dormitory complete. March 1, 1978.

RESOURCE MOBILIZATION

1. Make application for Title I CETA funds to provide institutional training to 80 persons in six skill areas of weatherization program in groups of 20. October 20, 1977.

2. Make application for a portion of Governor's 4% discretionary CETA funds to underwrite the development of training units on Energy Conservation Careers. September 15, 1977.

3. Make application to Old West Regional Commission to fund materials cost of constructing 20 person dormitory 50% passively heated. October 1, 1977.

4. Initiate contact with building supply dealers, manufacturers, and inventors to solicit donations or consignment of materials, equipment, and tools.

5. Continuing contact with sources of state and federal excess property.

6. Submit bids to Western Regional SERI, Montana Energy Resource Policy Office, Center for Social and Environmental Concerns, and Economic Development Administration for rfp's within the scope of the mission of MIAT.

PROGRAM DEVELOPMENT

1. Initial organization of library of training materials and negotiation of arrangements for the loan of materials with NCAT, AERO, CSEC, Montana Energy Resource Policy Office. October 1, 1977.

2. Analysis of results of first round of Montana Renewable Resource Technology Demonstration Program for potential application in emergency energy conservation program. November 1, 1977.

3. Design and publication of curriculum for first three HRDC weatherization crew orientations and in-service training sessions--Furnace Efficiency Analysis, Energy Audit, Program Management.

4. Coordination of survey of appropriate technology with Montana Solar Steering Committee.

5. Establishment of on-going evaluation procedures.

WORK PROGRAM ANALYSIS

1. What approaches were considered to the problem and what criteria were used to evaluate them?

1. Forming a CAA dominated program support corporation.

2. Forming an academic dominated program support vehicle.

3. Placing program support within state government.

Criteria: A. Community control B. Access to human and fiscal resources
C. Utilization of existing resources.

2. What advantages does the proposed approach offer over other approaches?

A non-profit corporation governed by diverse interests with a stake in the future quality of life in Montana offers several advantages. It provides an open space for sometimes conflicting interests to come together to meet common learning challenges; it ensures community control and access to varied resources both human and monetary; it avoids changes of self-perpetuation and self-serving.

3. What problems are anticipated in the selected approach?

NONE

4. What plans are anticipated for follow-up after completion of the project?

MIAT is intended to become an on-going self-sustaining project funded from mission oriented research and development opportunities and tuition lodging fees from participants. The Department of Natural Resources owns 34 water resource projects throughout Montana which offer additional opportunities for establishing similar projects and research centers focused on more localized technology transfer and design.

Other states

5. How and to what extent, will the project increase employment, improve the environment, improve health and living standards, or have other beneficial effects on the low-income community?

By providing a working/learning model of alternative methods of utilizing locally available resources to meet basic life support needs, MIAT will pioneer and institutionalize patterns of living and production which can enable communities to return to a sustained yield approach to their own development. A guiding principle in the selection of MIAT activities will be the conversion of fossil fuel energy intensive consumption to renewable resource based local production.

More specifically

1. Through the identification and adoption of appropriate technologies with high feasibility of implementation by family farms;

2. The certification of Emergency Energy Conservation workers in new career areas opened up by new technologies and national conservation policies.

3. The wider adoption of the use of renewable resource technologies to meet domestic and community center energy needs will stretch individual resources and reduce the acceleration of coal development.

7. CONCLUSIONS AND RECOMMENDATIONS

As a result of this investigation, the following conclusions are offered:

1) This study has clearly determined that many potential linkages exist which could be exploited to provide mutual benefit to low income human resources and to state agency natural resource management areas, with ultimate benefit to the taxpayer.

2) These potential linkages and interactions have not been exhaustively explored in this brief effort, and there is an obvious need for expanded investigation and development of linkage concepts.

3) Our studies suggest there are numerous barriers to implementation, and we conclude that these will center largely in the natural resource management area. Some barriers are real and some are imagined or contrived.

4) Implementation of the concepts developed here will require an innovative effort on the part of HRDC's to develop credibility with natural resource managers.

5) A specific demonstration project has been identified which could make effective use of an under-utilized state physical asset (Nevada Creek state water project) and provide programmatic benefit to Community Action agencies through the vehicle of appropriate technology. An initial effort at organization and preparation for such a demonstration was accomplished under this Grant, and a proposal was generated to explore potential federal funding sources.

Recommendations resulting from this study are as listed below:

1) Conduct an expanded study of this subject, allowing for more exhaustive investigation of human/natural resource linkages and barriers with all state natural resource management agencies as well as appropriate elements of federal and local government agencies. This expanded study should probably be made by DCA using the concepts identified in this initial study.

2) Pursue implementation of the appropriate technology training and demonstration project described in this report as an initial effort in human/natural resource interactions. This should be accomplished by the Department of Natural Resources.

3) Move to implement carefully considered, selected linkages and mechanisms described in this report to test concept viability and utility. This should be done by the most innovative and resourceful HRDC available.

AGREEMENT FOR DELEGATION OF ACTIVITIES
UNDER GRANT NO. 80300-R-75-13

THIS AGREEMENT, and any attachments which are expressly made part thereof, entered into as May 24, 1977, by and between the Human Resources Division/Department of Community Affairs, hereinafter referred to as the "Grantee", and the Department of Natural Resources and Conservation, hereinafter referred to as the "Delegate", shall govern certain activities of CSA Grant 80300-R-75-13.

WITNESSETH THAT:

I. DURATION OF CONTRACT

The Delegate shall commence performance of this agreement on May 24, 1977 and shall complete performance to the satisfaction of the Grantee no later than July 22, 1977. Upon review of the progress in meeting terms of section II, and upon written consent of both parties, this agreement may be extended for another thirty (30) days.

II. WORK TO BE PERFORMED

The Delegate shall, to the satisfaction of the Grantee, perform the following:

A. The Delegate will conduct an overview study to determine the types of linkages which might exist between the natural resource and human resource areas, which if properly implemented, could provide economic and experiential opportunities for low income people while benefitting the public good from the standpoint of more efficient utilization and conservation of publicly owned natural resources (water, energy, forest products, land and agricultural).

the [illegible]

Specifically, ~~the~~ Delegate will investigate the following:

1. Natural Resource areas which are susceptible to providing job and community-based business opportunities for low-income people.

2. Utilization of established low-income program expertise and organization in the substantial demonstration of conventional and innovative application of renewable, alternative energy forms and energy conversion systems.

3. Potential for improved dwelling energy conservation practices and materials systems which are based on more efficient or innovative use of forest resource primary and secondary products. This effort will be limited to conclusions drawn from consultation with private and public forest products utilization experts.

4. Review physical assets of Water Resources Division (state water projects) and identify potential natural/human resource demonstration projects based on such assets which could provide economic and program benefit to the low-income community.

III. FUNDS AND SCHEDULE OF PAYMENT

Upon timely receipt of funds from the Community Services Administration (CSA), the Grantee shall disburse to the Delegate a total not to exceed $5,400.00.

IV. REPORTS, RECORDS AND EVALUATION

A. The Grantee shall supervise, evaluate and provide guidance and direction to the Delegate in the conduct of activities delegated under this Agreement.

B. The Delegate shall maintain and submit such audits and records as deemed proper and necessary by the Grantee or the CSA. The Delegate agrees to adhere to all pertinent CSA Instructions and to perform those fiscal functions necessary to assure a complete and accurate account of funds disbursed under this Agreement. The Grantee, CSA, the Legislative Auditor of the State of Montana and the Department of Community Affairs, and any of their duly authorized representatives, shall have access to any books, documents, papers and records pertinent to this Agreement for the purpose of preparing audits or examinations.

C. The Grantee may request monthly progress reports from the Delegate stating success in achieving those items listed in II 1-4.

D. No later than thirty days after the termination date of this contract, the Delegate shall submit to the Grantee a report describing its findings pursuant to items listed in IIA1-4.

V. AMENDMENTS

Changes in this Agreement shall be mutually agreed upon and incorporated as amendments to the Agreement.

VI. TERMINATION

The Grantee may, by giving reasonable written notice specifying the effective date, terminate this Agreement in whole or in part for cause, which shall include: (1) failure, for any reason, of the Delegate to fulfill in a timely and proper manner its obligations under this Agreement including compliance with the approved program and attachments; (2) submission by the Delegate to the Grantee of reports that are incorrect or incomplete in any material respect; (3) ineffective or improper use of funds provided under this Agreement; and (4) suspension or termination by the CSA of the grant under which this Agreement is made.

In the event of any termination, all property and finished or unfinished documents, data, studies and reports purchased or prepared by the Delegate under this Agreement shall be disposed of according to CSA directives.

The Delegate may, by giving reasonable written notice specifying the effective date and reason(s), terminate its participation in the Agreement.

VII. ASSIGNMENT

Upon mutual agreement between the Grantee and the Delegate, or upon directive from the CSA, the Grantee and the Delegate agree that this contract may be assigned to another Delegate agency. This assignment must be executed through a successor-in-interest agreement entered into between all parties concerned.

VIII. REVIEW OF NEW DIRECTIVES

The Grantee shall submit promptly to the Delegate any pertinent new directives or instructions as received from CSA.

IX. COMPLIANCE WITH LOCAL LAWS

The Delegate shall comply with all applicable laws, ordinances and codes of the state and local governments.

X. CIVIL RIGHTS COMPLIANCES

The Delegate agrees to comply with all applicable Federal, State or local Civil Rights laws including Sections 64-316 through 64-330 of the Revised Codes of Montana.

XI. COVENANT AGAINST CONTINGENT FEES

The Delegate warrants that no person or selling agency or other organization has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warrant, the Grantee shall have the right to annul the Agreement without liability or, in its discretion, to deduct from the Agreement or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee or seek such other remedies as legally may be available.

IN WITNESS WHEREOF, the Grantee and the Delegate have executed this Agreement as of the date first above written.

Department of Natural Resources
and Conservation
Delegate

BY:____________________
John Orth

POSITION:____________________

Department of Community Affairs/
Human Resources Division
Grantee

BY:____________________
Harold A. Fryslie

POSITION: Director

BY:____________________
John Allen

POSITION:____________________

APPENDIX B

EXCERPTS FROM GOVERNOR'S

ANNUAL REPORT - FY 1976
FOR
NATURAL RESOURCE MANAGEMENT AGENCIES